3. DCM prefers to use color imagery, as it provides greater information and additional contrasts for shoreline delineation. This is important to the success of the ESMP since DCM's project needs focus on quantifying existing shoreline types and the presence of hardened structures. Given this preference, it may be that black and white imagery increases user difficulty during the digitizing process.

4. Another consideration is the availability of leaf-off imagery. Leaf-off imagery is not available in any of the datasets DCM has identified and therefore cannot be utilized.

5. The final criterion to consider is that given available imagery, DCM prefers to use multiple imagery datasets rather than a statewide dataset for digitizing activities, where each dataset covers a smaller portion (i.e. one county) of the coastal area. The reason for this is related to the degree of resolution associated with available statewide and county-level datasets. As a result the date of imagery acquisition and tidal range may vary from county to county along the final shoreline.

III b.3. Imagery Hierarchy

Given the imagery review presented in Table 1, the criterion listed in Section III b.2. and after extensive internal discussion, DCM has determined that imagery used in the shoreline delineation process needs to be of the highest resolution available. At a maximum, pixel width should be no greater than 2-feet, as resolutions lower than 2-feet make shoreline features difficult to identify and distinguish. Figure 1 provides a comparison of 2006 NAIP imagery with 1-meter resolution, 2003 post-Isabel imagery with 2-foot resolution and 2006 New Hanover County imagery with 6-inch resolution. All three images are for the same extent in ArcGIS® at a scale of 1:500 feet. Figure 1 shows that the various resolutions provide very different levels of detail concerning the physical features of the shoreline. In Figure 1 the 1-meter NAIP imagery (left) is fuzzy at scales appropriate for digitizing while additional clarity is afforded when using the 2-foot or 6-inch resolution imagery. As DCM is interested in using available imagery for both shoreline and structure delineation, datasets with 1-meter resolution are not appropriate for the ESMP effort. Therefore, imagery with a resolution equal to or lower than 1-meter is removed from the list of options (NAIP, Aster Satellite or SAV Mapping imagery). County-level aerial orthophotos are available at resolutions ranging from 6-inch to 2-foot.

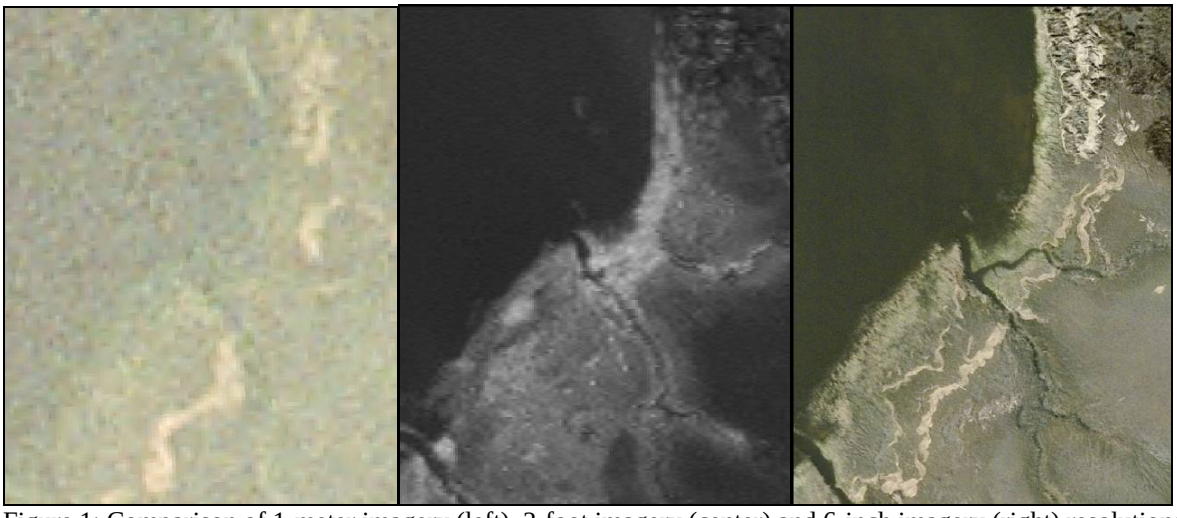

Figure 1: Comparison of 1-meter imagery (left), 2-foot imagery (center) and 6-inch imagery (right) resolutions.